WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY SUPPLEMENTARY SHEET

International application No.

PCT/EP2004/002679

Re point V

Reasoned statement regarding novelty, inventive step and commercial applicability; citations and explanations supporting this statement

Reference is made to the following documents:

D1: EP-A-1 111 735 (PIERBURG AG) June 27, 2001 (2001-06-27)

D2: US-B-6 268 6791 (REYNVAAN CONRAD ET AL.) July 31, 2001 (2001-07-31)

D3: PATENT ABSTRACTS OF JAPAN vol. 2000, No. 26, July 1, 2002 (2002-07-01) & JP 2001 268983 A (DENSO CORP.), September 28, 2001 (2001-09-28)

D4: PATENT ABSTRACTS OF JAPAN vol. 2002, No. 02, April 2, 2002 (2002-04-02) & JP 2001 275327 A (DENSO CORP.), October 5, 2001 (2001-10-05)

D5: EP-A-0 395 515 (MITSUBA ELECTRIC MFG CO.) October 31, 1990 (1990-10-31)

D6: EP-A-0 405 173 (MITSUBISHI ELECTRIC CORP.) January 2, 1991 (1991-01-02)

1. The present application does not satisfy the requirements of Article 33(1) PCT because the subject matter of claims 1 and 5 is not novel in the sense of Article 33(2) PCT.

1.1 Figure 1 of document **D1** and figure 1 of document **D2** each disclose a fuel pump comprising an electric motor having laminates (D1: 5; D2: 29) and sliding carbon brushes (D1: 3; D2: 31), with a plurality of laminates obviously being covered in each rotary position of the commutator. Although not explicitly disclosed, a slotted armature which has coils arranged in its slots is always provided in this type of motor.

The subject matter of claim 1 is therefore not novel.

1.2 The commutator from D2 is axially in the form of a disk and the brushes have a

trapezoidal cross section.

The subject matter of claim 5 is therefore not novel.

2. The present invention does not satisfy the requirements of Article 33(1) PCT because the subject matter of claims 1-5 is not based on an inventive step in the sense of Article 33(3).

2.1 Figure 1 of document **D3** discloses an electric motor having all of the features of the electric motor according to claim 1 and claim 5: armature 15 with slots and coils 16, axially disk-like commutator having laminates S1-S12, trapezoidal brushes 20 and 21 which always cover two laminates.

In order to increase the service life of the brushes (see D3, Abstract, first line), a person skilled in the art would use the teaching from D3 in a known fuel pump as illustrated in D4, fig. 1, and would therefore create a pump according to claims 1 and 5 without any inventive step on his part.

2.2 In D3, the carbon brushes are as wide as two laminates (see "Solution" section, line 5): increasing this width to cover two laminates plus one insulation layer does not appear to be inventive since it is in any case known to increase the brush width to reduce the current density and thus increase the service life of the brushes (see D5, col. 5, lines 22-28).

The subject matter of claim 2 is therefore not inventive.

2.3 In D3, the number of laminates (12) is a multiple of the number of slots (6). If the term "half-coil" is interpreted as coil, the last feature of claim 3 can also be found in D3. The subject matter of claim 3 is therefore not based on an inventive step either.

2.4 D6 discloses increasing the resistivity of a brush in a fuel pump to above 200 microohm meters in order to ensure good operation at 36 V (see D6, claim 6). This teaching can be readily applied in the case of the pumps from D1 and D2 for example,

with the arbitrary selection of a resistivity of between 300 and 400 microohm meters – as cited in the single feature of claim 4 – not being regarded as inventive within the scope of the teaching of D6.

Re point VIII

Certain observations on the international application

3. The application does not satisfy the requirements of Article 6 PCT because claim 3 is not clear.

The term "half-coil" does not have a generally known meaning and leaves the reader in some doubt about the meaning of the technical feature in question.

The term "corresponding" is vague and unclear and leaves the reader in some doubt about the meaning of the technical feature in question.

This means that the definition of the subject matter of claim 3 is not clear (Article 6 PCT).